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AMENDMENT AFTER FINAL

TECHNOLOGY

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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Serial No. : 09/101,049 /

Confrm. No. : 9220

Filing Date : June 26, 1998 /

GAU : 2827

Examiner : Mr. D. Graybill

For : Contactless Electronic Module For A  
Card Or Label

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#20/B  
Ampt  
N/E  
JMcLink  
7/18/02

AMENDMENT D - AFTER FINAL

This is in response to the April 4, 2002 Office Action  
FINAL (Paper No. 19).

Please amend:

IN THE CLAIMS:

In accordance with Rule 37 C.F.R. §1.121, there is  
attached at the foot of this amendment a copy of the amended  
claims showing the changes made in those claims from the  
ones previously on file.

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Claim 27. Cancel

Claim 28 (Twice Amended). An electronic label comprising an electronic module having a substrate (10) with a major plane surface; an antenna (2) mounted on top of said substrate and having a plurality of turns parallel to the substrate major plane surface; an electronic micro circuit (7) insulatively mounted on top of and electrically connected to said antenna; said electrically connected antenna and microcircuit comprising connection terminals (11,12) of the antenna and contact pads (13,14) of the electronic microcircuit (7) connected via leads (15), said label having a height dimension less than 0.76mm, and length and width dimension so that it may be mounted if desired within a well in an ISO 7810 standard mechanical dimension integrated circuit chip card.

Claim 29 (Twice Amended). An electronic label comprising an electronic module (6) having a substrate (10) with a major plane surface, an antenna (2) and an electronic microcircuit (7), said microcircuit (7) being connected to the antenna (2) to enable contactless operation of the module (6), the whole of the antenna (2) being arranged on the substrate and comprising turns made in the plane of the substrate (1D), said microcircuit antenna connection including said antenna having connection terminals (11,12) being electrically connected to corresponding, respective contact pads (13,14) of the microcircuit, a tuning capacitor (17) being connected in parallel to the terminals (11,12) of the antenna to the contact pads (13,14) of the electronic microcircuit (7), the value of the capacitor (17) being chosen to obtain an operating frequency for module (6) in the range of approximately 1 Mhz to 450 Mhz, said label having a height dimension less than 0.76mm and length and width dimensions to be mounted if desired within a well in an ISO 7810 standard mechanical dimension integrated circuit chip card.

Claim 32. Cancel

Claim 33. (Amended) Electronic label in accordance with claim 28 wherein the antenna (2) has an outer size in the region of 12mm.

Claim 34. Cancel

Claim 35. Cancel

Claim 36. Cancel

Claim 42. (Amended) Electronic label in accordance with claim 29, wherein the value of tuning capacitor (17) is between 12 to 180 picoFarad, and the operating frequency of the module is approximately 13.56 Mhz.

Claim 43. (Amended) Electronic label in accordance with claim 29, wherein the value of turning capacitor (17) is between 30 to 500 picoFarad, and the operating frequency of the module is approximately 8.2 Mhz.

Claim 49. Cancel

Claim 50. (Amended) The label according to claim 28, wherein said substrate comprises an electronic chip card of ISO 7810 mechanical size with a well on one major plane surface thereof, and said antenna and microcircuit being positioned in said well below said major plane surface.

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Claim 51. (Amended) The label according to claim 29, wherein said substrate comprises an electronic chip card of ISO 7810 mechanical size with a well on one major plane surface thereof, and said antenna and microcircuit being positioned in said well below said major plane surface.

REMARKS

After amendment there are two independent claims 28 and 29; with claims 33, 37-40 and 50 depending from 28; and 42-46 and 51 from 29.

Claims 27, 32, 34, 35, 36 and 49 have been cancelled.

Claims 27-28, 42-43 and 50-51 have been amended to address the §112 rejection. There is no new matter in the amended claims.

The amendments to the claims should be entered after FINAL, because they reduce the number of claims, and the changes are needed to overcome formal (i.e., wording and spelling) §112 rejections.

Regarding the drawings, Office letter, page 2, ¶¶1-2, this application has 8 sheets of drawings, a copy is attached.

Claim 28 stands rejected on §102 on Hayashi, JA 71-46922 (Ref. O) or Matsuzaki 5,604,383 (New Ref. A, as first cited and applied in the Office letter FINAL. The rejections are respectfully traversed.

An object and aspect of applicants' invention is a structure that can be efficiently and thriftily manufactured. In one embodiment, there is a substrate (10), on top of one surface of the substrate is the antenna (2), on top thereof (i.e., on top the antenna) is the

microcircuit (7). There is an electrical insulation between the antenna and microcircuit. Electrical contact is made between the antenna and microcircuit. Note the sequence:-- substrate, antenna on top the substrate, microcircuit on top the antenna. This is cost efficient to make. Hayashi does not have this structure, e.g., Fig. 4A shows the substrate between the antenna, and the chip (microcircuit). The connections between the latter two are by "vias" through the substrate. Vias are expensive. This is a relatively costly structure and it is submitted more difficult structure to make. Applicants' structure is different, simpler, much easier to make and economical to make. Applicants' claim 28 is new §102 over Ref. O and not anticipated by the reference.

Matsuzaki is cited for the first time in the Office letter FINAL. It does not teach and does not suggest an electronic label (applicants' invention) or a contactless electronic chip card (also applicants' invention). The reference's title tells it all -- ... Power Supply Device ... This patent is a power supply -- not a transmitter - receiver - label circuit. The reference does have a coil, and does have a chip (micro circuit). It does not have an antenna. The Office letter refers to the patent's element 33. This, 33 is a coil that is part of the magnetic inductive film element:--

"A nearly square magnetic inductive film element 30, which has a coil conductor film 33 arranged in a spiral, ..."

Col. 7, lines 8-10

This is an induction coil in a power supply circuit. The power supply is small, thus its induction coil 33 is also small. But it is always an induction coil, not an antenna, and not applicants' antenna. Coil 33 does not transmit, and does not receive signals from, outside the circuit. Its function and operation are different from applicants' antenna.

Applicants' device in one application is for use in a standard ISO 7810 size card whose maximum thickness is 0.78 mm. This dimension is critical. Matsuzaki is cited for "a thickness of about 2 mm or less," (col. 10, line 67). This is not a teaching of applicants' critical dimension. Further, Matsuzaki is a small circuit without criticality, and very probably, as taught, cannot be made much thinner than 2.0 mm; and further there is no reason, no criticality, to make it much less than that preferred height.

Claim 28, it is respectfully submitted, is new over and not anticipated by either of the two applied references, and withdrawal of the rejection is courteously requested.



Claim 29 stands rejected under §102 by Jordan, 5,423,334 (Ref. B). Applicants' and the patent's structures are different, and their applications, i.e., intended purposes and uses are very different. Applicants' is for use, in one example, in a smart card and therefore must meet certain dimensions, viz. < 0.78 mm thick. Size is a classical objective and often very elusive. Applicants teach in detail how to make their preferred device.

Ref. B's device is for a quite different use, viz. medical, implantable in the human body. Ref. B's "characterization tag 180" is taught to have "a thickness less than or equal to approximately 2.5 millimeters . . ." (col. 19, lines 63-64). There is no teaching of how to make the tag. Size is an aspect of applicant's claim 29. There is no teaching, no suggestion, in Ref. B of how to make or to achieve applicants' very thin and novel device.

Dependent claims 33, 37 and 50 stand rejected on Ref. O and 38-41 on Ref. A. The dimensions and size, are important. There is a long felt need for smaller devices that perform the required duties. In the specification, applicants discuss prior art. Applicants teach in detail how to make the small, novel device of claim 33. The device resulting from that teaching is new. The references do not teach how to get this size. These claims define size, different locations of the parts and in claim 50 (now

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dependent on claim 28) that the ISO format card well is the substrate.

Dependent claims 42-46 and 47 (now dependent on claim 29) stand rejected on Ref. B and O. Applicants teach how to make the smaller device, a novel device, and these claims are directed to that smaller structure.

This is an amendment after final and the amendment should be entered as (a) the total number of claims is reduced, (b) the amendments are for form (§112) and there is no new matter, and (c) for the reasons given the independent claims 28 and 29 are believed to be allowable. If the examiner finds any remaining issues, then he is respectfully requested to telephone applicants' attorney for an interview.

Respectfully submitted,

  
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July 2, 2002

Eda Krantz





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*twice*  
Claim 28 (Amended). An electronic label [such that 2800] may be mounted in a well in an integrated circuit chip card of ISO 7810 standard mechanical dimensions], comprising an electronic module having a substrate (10) with a major plane surface; an antenna (2) mounted on top of said substrate and having a plurality of turns parallel to the substrate major plane surface; an electronic micro circuit (7) insulatively mounted on top of and electrically connected to said antenna; said electrically connected antenna and microcircuit comprising connection terminals (11,12) of the antenna and contact pads (13,14) of the electronic microcircuit (7) connected via leads (15), said label having a height dimension less than 0.76mm *and length and width dimension* [whereby said label] may *so that* be mounted if desired within a well in an ISO 7810 standard mechanical dimension integrated circuit chip card. *X*

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Claim 29 <sup>Twice</sup> (Amended). An electronic label [such that it may be mounted in a well in an integrated circuit chip card of ISO 7810 standard mechanical dimensions], comprising an electronic module (6) having a substrate (10) with a major plane surface, an antenna (2) and an electronic microcircuit (7), said microcircuit (7) being connected to the antenna (2) to enable contactless operation of the module (6), the whole of the antenna (2) being arranged on the substrate and comprising turns made in the plane of the substrate <sup>(10)</sup> (1), said microcircuit antenna connection including said antenna having connection terminals (11,12) being electrically connected to corresponding, respective contact pads (13,14) of the microcircuit, a tuning capacitor (17) being connected in parallel to the terminals (11,12) of the antenna to the contact pads (13,14) of the electronic microcircuit (7), the value of the capacitor (17) being chosen to obtain an operating frequency for module (6) in the range of approximately 1 Mhz to 450 Mhz, said label having a height dimension <sup>and length and width dimensions to</sup> less than 0.76mm [whereby said label may] be mounted if desired within a well in an ISO 7810 standard mechanical dimension integrated circuit chip card.

Claim 33. <sup>(Amended)</sup> Electronic label in accordance with claim 28 [27], wherein the antenna (2) has an outer size in the region of 12mm.

Claim 42. <sup>(Amended)</sup> Electronic label in accordance with claim 29, wherein the value of tuning capacitor (17) is <sup>between</sup> [in the region of] 12 to 180 picoFarad, and the operating frequency of the module is approximately 13.56 Mhz.

Claim 43. <sup>(Amended)</sup> Electronic label in accordance with claim 29, wherein the value of turning capacitor (17) is <sup>between</sup> [in the region of] 30 to 500 picoFarad, and the operating frequency of the module is approximately 8.2 Mhz.

Claim 50. <sup>(Amended)</sup> The label according to claim <sup>28</sup> [27], wherein said substrate comprises an electronic chip card of ISO 7810 mechanical size with a well on one major <sup>plane</sup> [plain] surface thereof, and said antenna and microcircuit being positioned in said well below said major plane surface.

Claim 51. <sup>(Amended)</sup> The label according to claim <sup>29</sup> [27], wherein said substrate comprises an electronic chip card of ISO 7810 mechanical size with a well on one major <sup>plane</sup> [plain] surface thereof, and said antenna and microcircuit being positioned in said well below said major plane surface.